

Engineer of Record Requirements

The Engineer of Record shall certify that to the best of its knowledge and belief, based upon the reports, tests and observations including third parties for the following: 1) the City of Surprise **owned water and sewer** is in substantial (*90% or more of inspection items verified*) conformance, as verified by actual field measurements with the approved design drawings, revisions and MAG and City of Surprise specifications; 2) that **sewer** manhole stationing, invert elevations, pipe size, materials, alignment and grade are in substantial conformance with the approved design drawings and specifications. (*Hold points may be used for pipe installation to verify items prior to backfill over any installed pipe*); 3) that all portions of the **sewer** tested, (*Verify and document mandrel, air pressure test, video and manhole vacuum testing*) has passed such testing; 4) that **water** is installed and in conformance with plans and specifications for pipe installation that includes pipe size, material, blocking, thrust and anchor blocks, correct valves and fittings, random check of bolting torque and fire hydrants. (*Hold points may be used for pipe installation prior to backfill over any installed pipe*). 5) that **water** and **sewer** is reflected on as-built mylars. (*Accurately reflects existing conditions*); 6) and that backfill material, methods that include processing of soils and compaction in City of Surprise Right-of Way for water and sewer trenching has been tested and verified by the Geo-Technical Engineering consultant. (*The above activities may require near continuous field inspections when they are active to provide reasonable assurance*).

The Engineer of Record or his designee provides the quality control (QC) and the City Civil Inspector provides the quality assurance (QA) for the project. (*Work will be monitored by City Civil Inspector*) All water line testing and operational will be performed by Arizona-American.

The Engineer of Record is a Registered Civil Engineer designated and hired prior to the start of construction by the Developer to provide field observation and compile, review and comment on project documentation and items by third parties, including filed reports, material testing reports and as built drawings and to certify to requirements as noted above. The Engineer of Record's site Field Representative when used must be designated in writing and be qualified by experience, education and/or certification for construction areas delegated and **not an employee of the Contractor or Developer**.

The Engineer of Record and/or field representative shall notify designated owner representative and City Civil Inspector should they encounter construction that does not appear to be in accordance with approved plans and specifications and provide progressive inspection reports at each stage of construction. A copy of completed sewer video along with operator notes is to be furnished by contractor to the City Civil Inspector and Engineer of Record for review. Geo-Tech Consultant will certify that the material testing and methods are in substantial conformance in accordance with MAG and the City of Surprise specifications and requirements. A stage of construction certification for utilities will be required prior to placing of concrete for streets.

Final Certification Format

As Engineer of Record, I certify that to the best of my knowledge and belief, based upon my observations, review of reports, tests and including items created and preformed by third parties, that these improvements for City of Surprise owned Sewer and Water infrastructure were built in accordance with the approved plans and specifications.

I recommend approval and acceptance of these improvements as conducted under Permits No: _____

For the project titled: _____

Located at _____

Engineer's Signature (Seal) **Date** _____

Engineer of Record General Information

For information only: The requirement for Engineer of Record for water and sewer has been part of our City of Surprise specifications as of July 1st 2005 and has been enforced for any permitted construction as of January 1st 2007. These approved requirements were approved by City of Surprise Engineer and are available on the City Engineering web page under Civil Inspection. The City of Surprise requires construction within the right-of-way to conform to the adopted MAG 12.04.010 and the adopted City of Surprise supplement 12.04.020 codes. The requirement for the developer designating an on-site representative is under provision section 16.16.020 (D). The latest supplement includes the approved Engineer of Record requirements as noted above.

Maricopa County requires Engineer of Record for all infrastructure improvements related to the Right-of-Way and most firms have worked with them in past. Our objective was to pattern our requirements after theirs with a proven history but use it for City of Surprise owned sewer and water only as trench failures and correct materials are a big concern for the city.

The digging of the trenches and safety will still remain with City and the normal Quality Assurance inspections will continue to be performed by the City of Surprise Civil Inspector. Coordinating of functions can be done at the pre-job conference and on the job.

The site representative does not have to be an Engineer but must meet above requirements for page one. This person will need to verify pipe installation and materials prior to backfilling and all items listed above for page one. Hold points with notice to call Site Representative can be used when site is not active or continuous field inspection isn't needed for reasonable assurance.

The assigned City of Surprise Inspector will be more than willing to work with the Site Representative. There are a number of firms that perform this service and the developer is not required to use the Project Design Engineering firm. Some of the developers provide this service for their projects (Asante) for their own protection and certification that includes all the testing to A.D.E.Q. with an excellent working relation with the City of Surprise. Arizona-American Water Company has a contract with City of Surprise Water Services to perform all domestic water line testing and is initiated by City Inspector by issuing Underground Water Construction form. Remember that all operational and water line testing is performed by AAWC and they also inspect their owned systems except for backfill, trenching and safety.

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